ral cases were not sub-acute or chronic. I saw a case presented by Dr. Loring to the New York Ophthalmological Society, but I did not think that it was anything but a chronic inflammation.

DR. MILLER.—I have seen one case of bilateral acute inflammation of the lachrymal gland. It was sent to me by the family physician, who supposed it to be a case of gonorrhœal ophthalmia. There was great swelling and exquisite tenderness. The diagnosis was not difficult. The patient had gonorrhœa at the time. The inflammation subsided in three days without suppuration, under hot water dressings.

MULTIPLE COLOBOMATA OF THE IRIS, OR POLYCORIA CONGENITALIS.

BY W. F. MITTENDORF, M.D.
NEW YORK.

THE infrequency of this condition will, I hope, excuse me for reporting two cases of this kind. Double pupils, congenital as well as traumatic, are not rare, but five pupils in one eye are not often seen.

CASE I.—Mrs. R., a young married lady, of Massachusetts, came to me complaining about the condition of her left eye. Not only was her vision very poor, but the light was very distressing to her eyes, and, besides this, there was sympathetic irritation caused by a staphylomatous bulging of the right eye. Seven years ago the right eye was lost after an extensive ulceration of the cornea. There is now a total adherent leucoma, the iris is firmly mixed up with the cicatrix. It becomes inflamed and painful on the least exposure, and it has undermined her general health. The patient consented to its removal. The impaired vision of the left eye is due to compound myopic astigmatism, which is corrected by $-8_s \supset -18_c$ ax. 115°; this combination gave her a V. $= \frac{20}{40}$, but a short time after the use of the glasses and the removal of the right eye it rose to $\frac{20}{20}$?

The most curious appearance of this eye is due to the large number of pupils; there are five of them. The largest one is near the centre; it is slightly oval, but otherwise normal. On the nasal side there is another pupil, on a horizontal line with the central one; it is about half the size of the first, measuring 3 m.m. in a horizontal and 2 m.m. in a vertical direction; it is conical in shape, the base corresponding to the corneal border. On the other end of this horizontal line, on the outer corneal border, another pupil is seen, about half the size of the one on the nasal side; it is also conical in shape, and the base of the cone is formed by the corneal border.

In a vertical line with the central pupil, on the lower corneal border, is the fourth pupil, which is only a little smaller than the one on the nasal side. On the upper portion of the sclero-corneal junction the fifth and smallest pupil is seen; it is only about 1.5 m.m. long and 1 m.m. wide. All these pupils are apparently alike in structure; around the border of them a different pigmentation of the iris is very marked, and it looks as if they were all supplied with a muscular apparatus, but this is only apparent, as upon the use of a mydriatic only the central one dilates, or contracts if a myotic is instilled into the eye; the rest are somewhat changed, according to the action of the muscular apparatus of the surrounding iris-tissue.

On ophthalmoscopic examination, the red reflex of the fundus is readily noticed through all of them, but through the lower and also the inner one the edge of the lens is distinctly seen. It has somewhat of a dark, sharply defined border, which crosses nearly in the centre of the aperture. The outer and upper pupils are so small and so near the periphery, that the lens is not visible. The details of the fundus are readily seen through the central pupil, and a number of vessels (not, however, the disc or macula), can be observed through the inner and lower one.

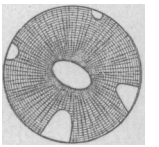
The lady has no difficulty in using this eye; but she has been using glasses which did not correct the error of refraction properly, and had on this account imperfect vision, which was improved by the sphero-cylindrical glass to $\frac{20}{20}+$. Her range of accommodation is very good, $= \frac{1}{5}+$, which would

indicate that no anomaly of the ciliary muscle exists. If the eye is covered in such a way that only one peripheral pupil is left free, she is able to see large objects, but not very distinctly. She thus sees the movement of a hand at a distance of several feet; but she uses the central one alone for ordinary vision. Her field of vision is only very slightly affected, as the second best pupil is at the nasal side, where her rather prominent nose limits the field in that direction; in a downward direction her perception goes to 80°; in the outer part it reaches to nearly 90°; but this is hardly due to the temporal pupil, as this is very small.

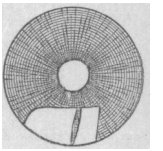
When in bright sun-light she has always complained about its dazzling effect, and I have added therefore a slight blue tint to her concave-cylindrical glasses, which seems to give her great comfort.

The lady tells me that her father has also a very peculiar looking eye, very much like hers, but she cannot tell whether there are a number of pupils in it or not, as she was not aware of their existence in her own eye. At my request her family physician examined the eye of the father, and reports to me that it is so.

The trouble is different from the usual forms of arrest of development, because a want of some of the radiating fibres of the iris would create a more or less triangular defect, and a congenital iridodialysis would be shallower than these pupils. The arrangement of pigment around these openings is exactly like that of the central pupil.



CASE II. is that of the father of the lady. In this case the right eye is affected. He has besides the central one, a pretty large second pupil just below the former; it is larger than the former, and at the very periphery of the iris. It is oval in shape, and divided by a thin band of tissue into two parts, of which this drawing will give an idea. The old gentleman says that neither his father nor mother had anything unusual about their eyes, and believes firmly that it is due in his case to exposure of the mother at the time of the



eclipse, in 1806, about five months before his birth. His mother and her sister (both pregnant) were very much interested in the event, and spent considerable time in watching it. The sister's eyes became inflamed immediately following, and she suffered considerably, but her child when born had perfect eyes. His mother's eyes were not affected, and she as well as he believes that, had they been so, the child would have escaped this deformity. The relation between polycoria and this maternal impression is certainly quite interesting.

The defect in the father's case is evidently caused by imperfect closure and partial displacement of the fœtal fissure, it being in the median line of the eyeball. In the daughter's case, hereditary transmission plays the most important rôle. Both cases are remarkable on account of the absence of accompanying defects of the choroid or the lids, and the unusual shape of the peripheral colobomata. Only few cases of this kind have been recorded; those of Sæmisch, Talko, and Rumschewitsch (Centralblatt für Augenheilkunde) are similar to mine. Deutschmann's view, that nearly all the cases of arrest of development, and consequently also those of colobomata, are due to intrauterine inflammatory processes, such as a sclero-chorio-retinitis, can hardly explain the occurrence of these defects, because there are no intra-ocular changes.

DISCUSSION.

DR. SEELY.—These cases are certainly interesting, although all of us probably have seen cases of polycoria. I intend to publish the history of a family in which a number of the members have polycoria. The interesting point is that all these patients have become blind. I should like to ask Dr. Mittendorf how old his patients were.

DR. MITTENDORF.—The daughter was thirty-two years old and the father sixty-five.

DR. NORRIS.—Will Dr. Seely state in what way his patients have gone blind?

DR. SEELY.—Apparently with choroiditis.